

We claim:

1. A disc player for reading data from an optical disc having two data layers accessible from the same side of the disc, said player comprising:
 - a source of laser beams generating respective first and second incident laser beams;
 - an optical assembly that focuses the first beam on the first data layer and the second beam on the second data layer to obtain respective first and second reflected beams;
 - a first data detector that detects data from the first reflected beam to generate a first data stream corresponding to data from the first data layer; and
 - a second data detector that detects data from the second reflected beam to generate a second data stream corresponding to data from the second data layer.
2. The disc player of claim 1 further comprising a first decoder that decodes said first data stream to generate a first decoded data stream; and a second decoder that decodes said second data stream to generate a second decoded data stream.
3. The disc player of claim 1 wherein said first and second laser beams have different optical characteristics.
4. The disc player of claim 1 wherein said first and second laser beams have different wavelengths.

5. A laser head for a disc player for reading data from an optical disc having a first and a second data layer on one side thereof, said head comprising:
- a first laser source generating a first incident laser beam;
 - a second laser source generating a second incident laser beam;
 - an optical assembly that directs said first and second incident laser beams onto said first and second data layers, respectively;
 - a first detector that detects a first reflected beam corresponding to the first incident beam and generates a first data stream corresponding to data from said first layer; and
 - a second detector that detects a second reflected beam corresponding to the second incident beam and generates a second data stream corresponding to data from said second layer.
6. The laser head of claim 5 wherein said beams have different wavelengths.
7. The laser head of claim 5 wherein said optical assembly includes a focusing lens that focuses the incident laser beams onto the respective data layers.
8. The laser head of claim 5 wherein the optical assembly intercepts the reflected beams and directs them to the respective detectors.

9. The head of claim 5 wherein the detectors receive and detect data from the two data layers simultaneously,

10. A method of reading data from two layers of a multi-layer optical disc simultaneously, the method comprising:

generating first and second incident laser beams;

directing the first and second incident laser beams at the respective data layers;

intercepting resulting first and second reflected laser beams corresponding to said first and second incident laser beams; and

detecting first and second data streams corresponding to data from said first and second data layers.

11. The method of claim 10 wherein said first and second incident laser beams have different wavelengths.

12. The method of claim 10 further comprising decoding said data streams.

13. The method of claim 10 further comprising tracking the relative movement of the laser head with respect to the disc by using the second reflected laser beam.

14. The method of claim 10 further comprising directing said first and

second incident laser beams using a common focusing lens.